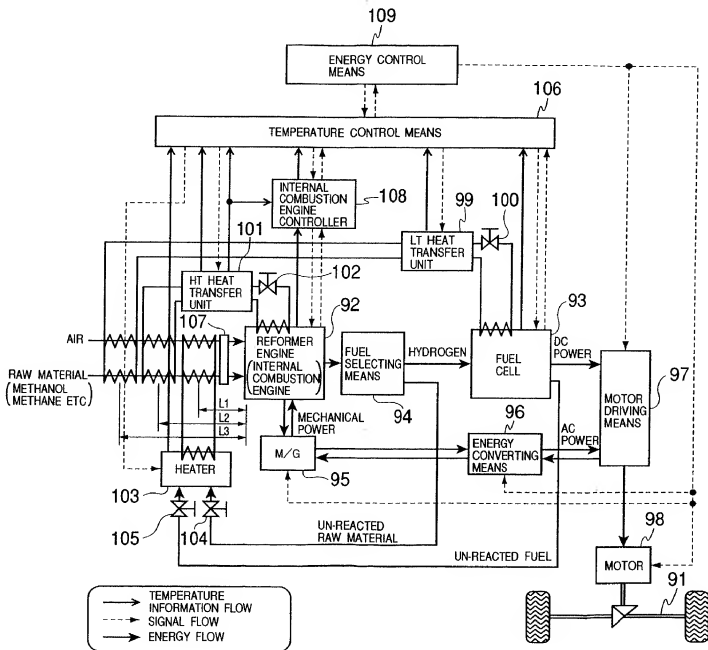


09/806530

FIG. 1



The diagram illustrates a temperature control system for a fuel cell engine. At the top, 'ENERGY CONTROL MEANS' (109) provides input to 'TEMPERATURE INFORMATION TOTAL CONTROL MEANS' (117). This central unit (117) is connected to several other components: 'FUEL CELL OPERATING TEMPERATURE CONTROL MEANS' (112), 'SYSTEM-COOLING SYSTEM CONTROL MEANS' (116), and 'INTERNAL COMBUSTION ENGINE INTAKE AIR TEMPERATURE CONTROL MEANS' (111). It also receives inputs from 'TEMPERATURE INFORMATION' (106) and 'TEMPERATURE INFORMATION' (110). The system includes various sensors and actuators: 'FUEL CELL OPERATING TEMPERATURE CONTROL MEANS' (112) receives inputs from 'T_{fc}' and 'T_{fc}' and outputs 'T_d*'. 'SYSTEM-COOLING SYSTEM CONTROL MEANS' (116) receives inputs from 'T_{fc}' and 'T_{fc}' and outputs 'T_{fc}*'. 'INTERNAL COMBUSTION ENGINE INTAKE AIR TEMPERATURE CONTROL MEANS' (111) receives inputs from 'T_{fc}' and 'T_{fc}' and outputs 'T_{fc}*'. 'HEATER CONTROL MEANS' (114) receives inputs from 'T_{fc}*' and 'T_{fc}*' and outputs 'T_{fc}*'. 'HT HEAT TRANSFER SYSTEM CONTROL MEANS' (113) receives inputs from 'T_{fc}*' and 'T_{fc}*' and outputs 'T_{fc}*'. 'LT HEAT TRANSFER SYSTEM CONTROL MEANS' (115) receives inputs from 'T_{fc}*' and 'T_{fc}*' and outputs 'T_{fc}*'. The system also includes '100 CONTROL VALVE', '105 CONTROL VALVE', '104 CONTROL VALVE', and '102 CONTROL VALVE'. The 'HEATER' (23) and 'HT HEAT TRANSFER UNIT' (101) are connected to the system. The 'LT HEAT TRANSFER UNIT' (99) is connected to the 'LT HEAT TRANSFER SYSTEM CONTROL MEANS' (115). The 'ENERGY CONTROL MEANS' (109) is connected to the 'TEMPERATURE INFORMATION TOTAL CONTROL MEANS' (117). The 'TEMPERATURE INFORMATION TOTAL CONTROL MEANS' (117) is connected to the 'TEMPERATURE INFORMATION' (106) and 'TEMPERATURE INFORMATION' (110).

FIG. 3

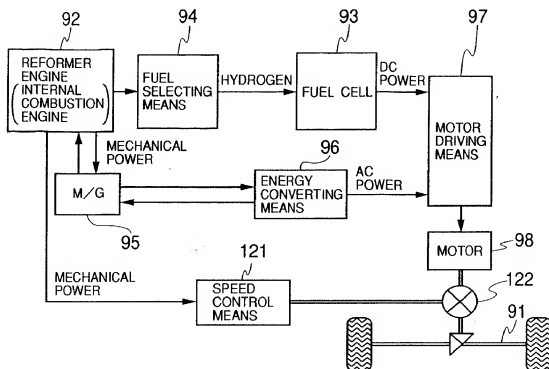


FIG. 4

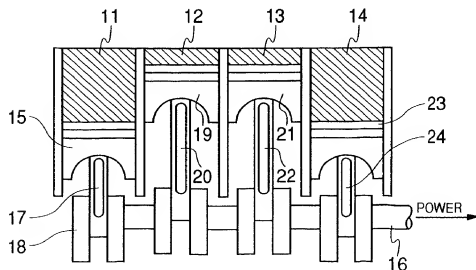


FIG. 5

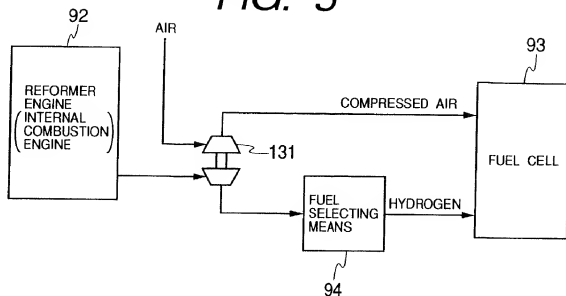


FIG. 6

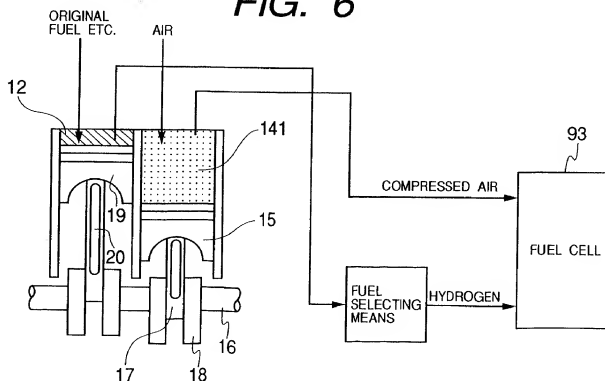


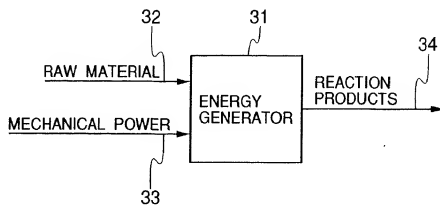
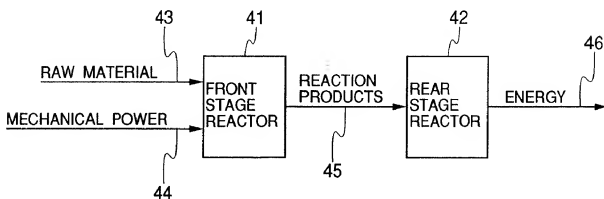
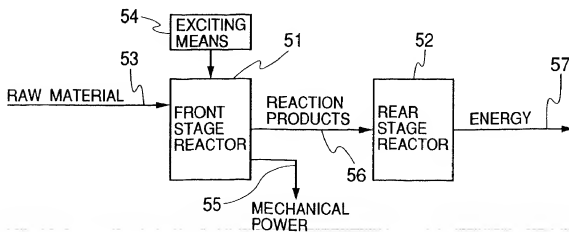
FIG. 7**FIG. 8****FIG. 9**

FIG. 10

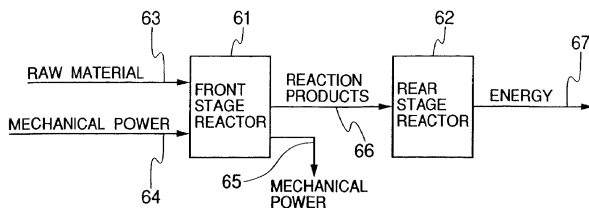


FIG. 11

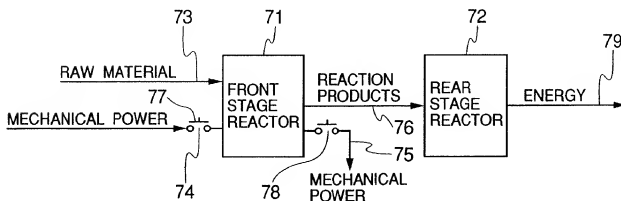


FIG. 12

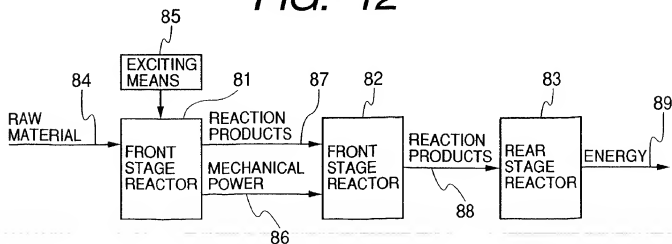
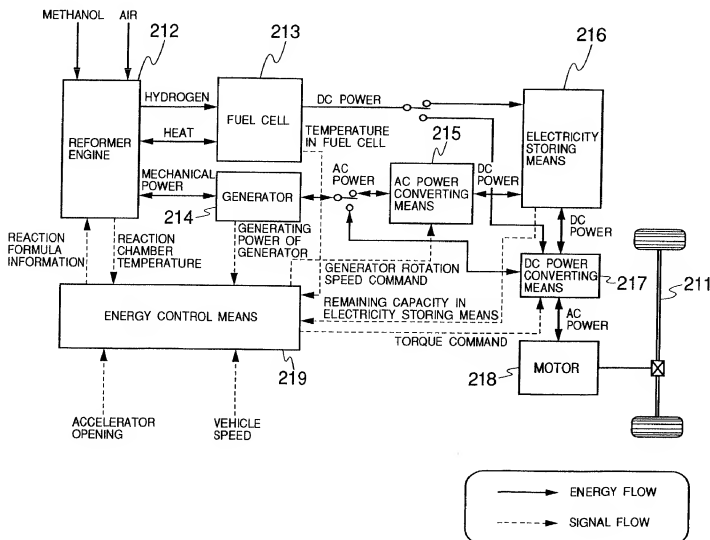
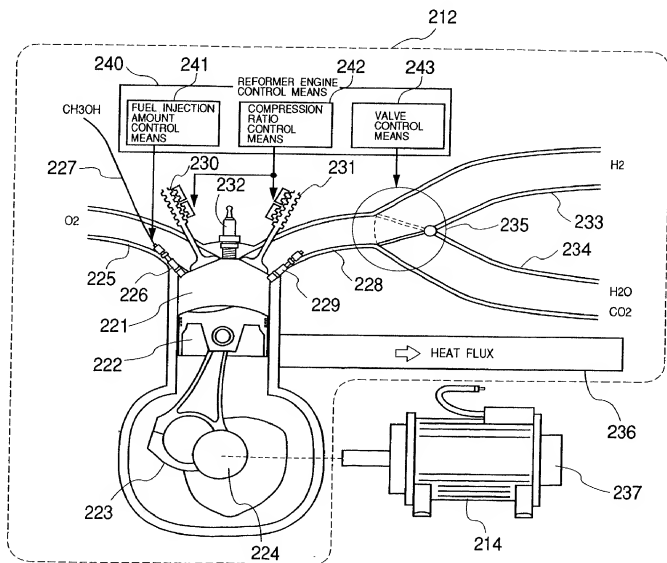


FIG. 13



09/806530

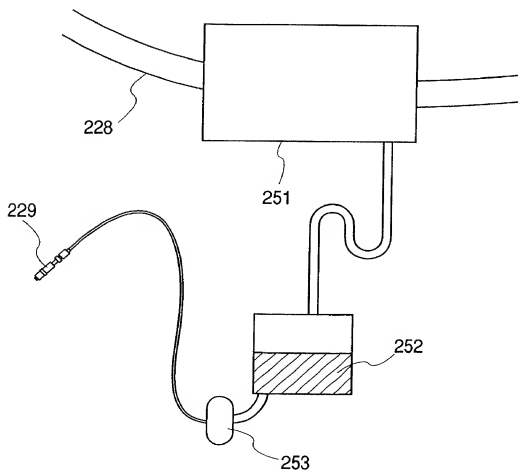
FIG. 14



000000 000000

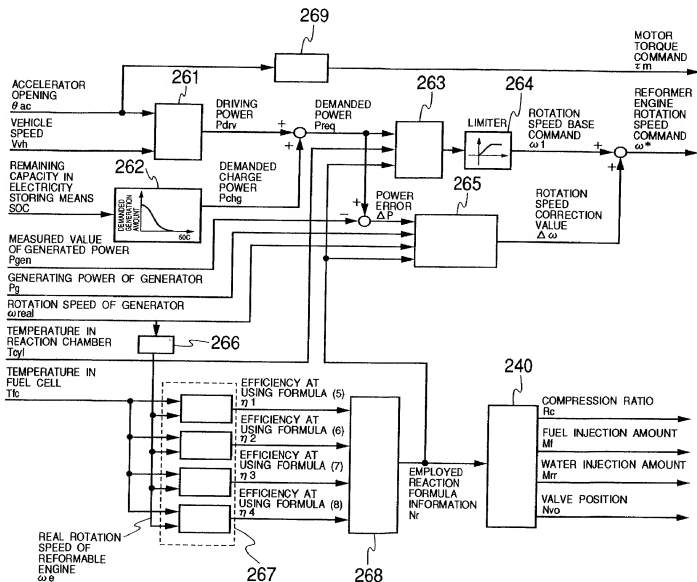
Evenson, McKeown, Edwards
& Lenahan P.L.L.C.
Serial No. Not Yet Assigned
Attorney Docket No. 381NP/49752
Sheet 9 of 12

FIG. 15



9/806530

FIG. 16



09/806530

FIG. 17

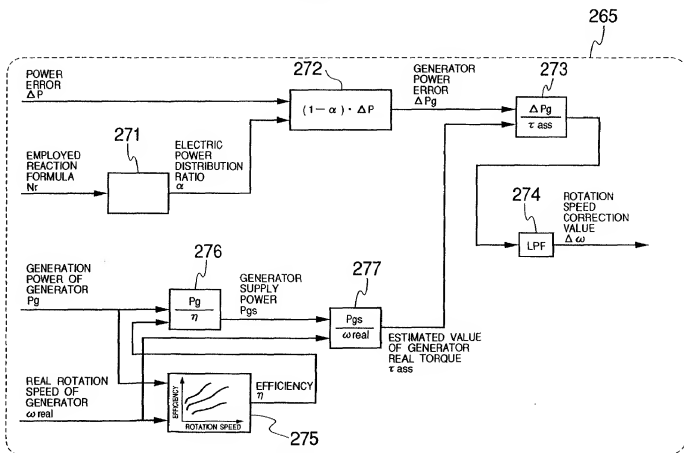


FIG. 18

